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(71) Applicant (for all designated States except US): **TEAC AMERICA, INC.** [US/US]; 7733 Telegraph Road, Montebello, CA 90640 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **VAN BUSKIRK, James, Edwin** [US/US]; 700 Antelope Cove, Cedar Park, TX 78613 (US).

(74) Agents: **PANIAGUAS, John, S. et al.**; Katten Muchin Zavis Rosenman, 525 W. Monroe Street, Suite 1600, Chicago, IL 60661-3693 (US).

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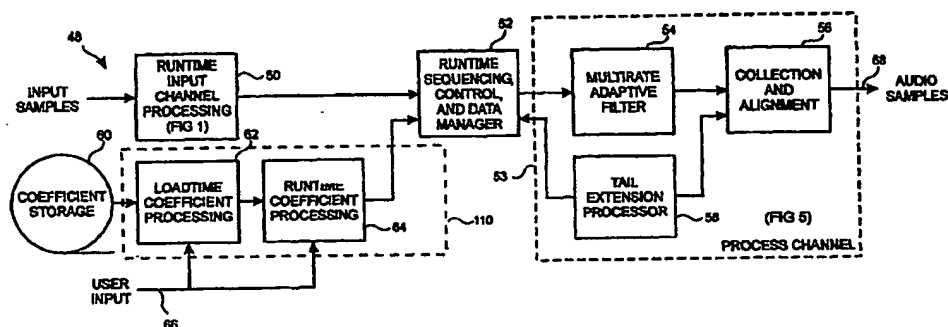
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(54) Title: **METHOD, APPARATUS, AND SYSTEM FOR SYNTHESIZING AN AUDIO PERFORMANCE USING CONVOLUTION AT MULTIPLE SAMPLE RATES**



(57) Abstract: A method, apparatus, and system (48) are disclosed for use in synthesizing an audio performance (50) in which one or more acoustic characteristics, such as acoustic space, microphone modeling and placement, can selectively be varied. In order to reduce processing time, the system utilizes pseudo-convolution processing techniques (54) at a greatly reduced processor load. The system is able to emulate the audio output in different acoustic spaces, separate musical sources (instruments and other sound sources) from musical context; interactively recombine (56) musical source and musical context with relatively accurate acoustical integrity, including surround sound contexts, emulate microphone models and microphone placement, create acoustic effects, such as reverberation (58), emulate instrument body resonance and interactively switch emulated instrument bodies on a given musical instrument.

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